Amendments to The Claims

The following listing of claims replaces all prior versions and listings of the claims in this application.

Listing of the Claims

1-193. (Cancelled)

194. (Currently amended) A method for identifying a compound that potentially modulates a T1R1/T1R3 receptor comprising:

(i) screening one or more compounds in a binding assay which identifies compounds that specifically bind to a T1R1/T1R3 receptor or which specifically modulate (enhance or inhibit) the specific binding of another compound to a T1R1/T1R3 receptor; and

(ii) identifying compounds that potentially modulate T1R1/T1R3 based on their (a) specific binding to a T1R1/T1R3 receptor or (b) modulation of the specific binding of another compound to a T1R1/T1R3 receptor, wherein said T1R1 is a T1R1 polypeptide and is (i) encoded by a nucleic acid sequence comprising SEQ. ID. NO: 8, (ii) encoded by a nucleic acid sequence comprising a nucleic acid that hybridizes to SEQ. ID. NO: 8 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS, or (iii) a T1R1 polypeptide possessing at least 95% sequence identity to the T1R1 polypeptide of SEQ. ID. NO: 5;

~~and~~ wherein said T1R3 is a T1R3 polypeptide and is (i) encoded by a nucleic acid sequence comprising SEQ. ID. NO: 9; (ii) encoded by a nucleic acid sequence that hybridizes to SEQ. ID. NO: 9 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, 10% SDS; and washing at 65°C in a solution comprising 0.2X SCC and 0.1% SDS, or (iii) a T1R3 polypeptide possessing at least 95% sequence identity to the T1R3 polypeptide of SEQ. ID. NO: 7;

and wherein said T1R1/T1R3 receptor specifically binds to a ligand that specifically binds to an endogenous (wild-type) human T1R1/T1R3 receptor comprised of at least one endogenous T1R1 polypeptide and at least one endogenous T1R3 polypeptide.

195. (Canceled)

196. (Previously presented) The method of claim 194 wherein said T1R1 and T1R3 are of the same species origin.

197. (Canceled)

198. (Previously presented) The method of claim 194 wherein said T1R1 is a human T1R1 comprising the amino acid sequence of SEQ. ID. NO: 5.

199. (Canceled)

200. (Previously presented) The method of claim 194 wherein said T1R1 is a human T1R1 that exhibits at least 95% sequence identity to the polypeptide of SEQ. ID. NO: 5.

201. (Previously presented) The method of claim 194 wherein said T1R1 is a human T1R1 that exhibits at least 96% sequence identity to the polypeptide of SEQ. ID. NO: 5.

202. (Previously presented) The method of claim 194 wherein said T1R1 is a human T1R1 that exhibits at least 97% sequence identity to the polypeptide of SEQ. ID. NO: 5.

203. (Previously presented) The method of claim 194 wherein said T1R1 is a human T1R1 that exhibits at least 98% sequence identity to the polypeptide of SEQ. ID. NO: 5.

204. (Previously presented) The method of claim 194 wherein said T1R1 is a human T1R1 that exhibits at least 99% sequence identity to the polypeptide of SEQ. ID. NO: 5.

205. (Previously presented) The method of claim 194 wherein said T1R1 is encoded by the nucleic acid sequence of SEQ. ID. NO: 8.

206. (Previously presented) The method of claim 194 wherein said T1R1 is encoded by a nucleic acid sequence that hybridizes to SEQ. ID. NO: 8 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS.

207. (Canceled)

208. (Canceled)

209. (Previously amended) The method of claim 194 wherein said T1R3 is a human T1R3 comprising the amino acid sequence of SEQ. ID. NO: 7.

210. (Canceled)

211. (Previously presented) The method of claim 194, wherein said T1R3 polypeptide possesses at least 95% sequence identity to the polypeptide of SEQ. ID. NO: 7.

212. (Previously presented) The method of claim 194, wherein said T1R3 polypeptide possesses at least 96% sequence identity to the polypeptide of SEQ. ID. NO: 7.

213. (Previously presented) The method of claim 194, wherein said T1R3 polypeptide possesses at least 97% sequence identity to the polypeptide of SEQ. ID. NO: 7.

214. (Previously presented) The method of claim 194, wherein said T1R3 polypeptide possesses at least 98% sequence identity to the polypeptide of SEQ. ID. NO: 7.

215. (Previously presented) The method of claim 194, wherein said T1R3 polypeptide possesses at least 99% sequence identity to the polypeptide of SEQ. ID. NO: 7.

216. (Canceled)

217. (Previously presented) The method of claim 194 wherein the T1R3 polypeptide is encoded by the nucleic acid sequence of SEQ ID. NO: 9.

218. (Previously presented) The method of claim 194 wherein said T1R3 polypeptide is encoded by a nucleic acid sequence that hybridizes to SEQ. ID. NO: 9 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS.

219. (Previously presented) The method of claim 194 wherein said T1R1/T1R3 receptor is expressed by a cell.

220. (Previously presented) The method of claim 194 wherein a membrane extract comprises said T1R1/T1R3 receptor.

221. (Previously presented) The method of claim 194 wherein said T1R1/T1R3 receptor is attached to a solid phase.

222. (Previously presented) The method of claim 194 wherein said T1R1/T1R3 receptor is in solution.

223. (Previously presented) The method of claim 194 wherein a liquid bilayer or vesicle comprises said T1R1/T1R3 receptor.

224. (Previously presented) The method of claim 219 wherein said cell is an intact or permeabilized cell.

225. (Previously presented) The method of claim 219 wherein said cell further expresses a G protein.

226. (Previously presented) The method of claim 219 wherein said cell is a prokaryotic cell.

227. (Previously presented) The method of claim 219 wherein said cell is a eukaryotic cell.

228. (Previously presented) The method of claim 227 wherein said cell is an insect, yeast, amphibian or mammalian cell.

229. (Previously presented) The method of claim 227 wherein said cell is a CHO cell, HEK-293 cell, COS cell or Xenopus oocyte.

230. (Previously presented) The method of claim 194 wherein the binding assay detects changes in the conformation of the T1R1/T1R3 heteromeric receptor.

231. (Previously presented) The method of claim 230 wherein said change is detected by NMR spectroscopy.

232. (Previously presented) The method of claim 230 wherein said change is detected by fluorescence spectroscopy.

233. (Previously presented) The method of claim 194 wherein said T1R1/T1R3 umami receptor further comprises a G protein.

234. (Previously presented) The method of claim 233 wherein said G protein is $G_{\alpha 15}$, $G_{\alpha 16}$ or gustducin.

235. (Previously presented) The method of claim 194 wherein said binding assay includes the use of a detectable label.

236. (Previously presented) The method of claim 235 wherein said label is an enzyme, radionuclide, chemiluminescent compound or fluorescent compound.

237. (Previously presented) The method of claim 194 wherein the binding assay detects displacement of a labeled ligand said such T1R1/T1R3 heteromeric receptor.

238. (Previously presented) The method of claim 194 wherein said binding assay is a fluorescence polarization or FRET assay.

239. (Previously presented) The method of claim 194 wherein the binding assay detects conformational changes in the T1R1/T1R3 taste receptor based on altered susceptibility to proteolysis.

240. (Previously presented) The method of claim 194 wherein the binding assay is a competitive binding assay.

241. (Previously presented) The method of claim 194 wherein the binding assay is a non-competitive binding assay.

242. (Previously presented) The method of claim 194 wherein the binding assay detects the effect of said compound on the specific binding of another compound to said receptor.

243. (Previously presented) The method of claim 194 wherein said binding assay detects the effect of said compound on the binding of L-glutamate or L-aspartate to said receptor.

244. (Previously presented) The method of claim 194 wherein said binding assay uses a cell that stably expresses the T1R1/T1R3 receptor on its surface.

245. (Previously presented) The method of claim 194 which said binding assay uses a cell that transiently expresses the T1R1/T1R3 receptor on its surface.

246. (Previously presented) The method of claim 194 wherein the binding assay uses an HEK-293 cell that stably expresses T1R1/T1R3 and further expresses $G_{\alpha}15$.

247. (Previously presented) The method of claim 246 wherein said binding assay detects the effect of said compound on the binding of a radioactively or fluorescently labeled legand to said receptor.

248. (Previously presented) The method of claim 194 wherein said binding assay detects binding based on a detectable change in fluorescence absorbance or refractive index.

249. (Previously presented) The method of claim 194 wherein the binding assay is a high-throughput screening assay.

250. (Previously presented) The method of claim 247 wherein the assay screens a combinatorial chemical library.

251. (Previously presented) The method of claim 247 wherein the assay screens a randomized small compound library.

252. (Previously presented) The method of claim 194 which further includes step (3) wherein the effect of said compound on a T1R1/T1R3 receptor is evaluated in a human or animal taste test.

253-301. (Canceled)

302. (Previously presented) The cell of claim 219, wherein the cell is an endogenous taste cell.

303. (Previously presented) The cell of claim 302, wherein the cell is a taste cell present in foliate, circumvallate or fungiform papillae.

304. (Previously presented) The cell of claim 302, wherein the cell is a taste cell present in geschmackstreifen, oral cavity, gastrointestinal epithelium or epiglottis.

305. (Previously presented) The cell of claim 304, wherein the cell is a taste cell present in gastrointestinal epithelium.

306. (Previously presented) The method of claim 219 wherein said T1R1 and T1R3 receptor sequences are expressed on the surface of said cell.

307. (Previously presented) The cell of claim 306, wherein the cell is an endogenous taste cell.

308. (Previously presented) The cell of claim 307, wherein the cell is a taste cell present in foliate, circumvallate or fungiform papillae.

309. (Previously presented) The cell of claim 307, wherein the cell is a taste cell present in geschmackstreifen, oral cavity, gastrointestinal epithelium or epiglottis.

310. (Previously presented) The cell of claim 309, wherein the cell is a taste cell present in gastrointestinal epithelium.